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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/879,572	06/12/2001	Arlene I. Ramsingh	0189-2001	4742

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EXAMINER	
WORTMAN, DONNA C	
ART UNIT	PAPER NUMBER
1648	21

DATE MAILED: 08/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/879,572	RAMSINGH ET AL.	
	Examiner	Art Unit	
	Donna C. Wortman, Ph.D.	1648	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 June 2003, 11 June 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15,17-28,30-36 and 54-72* is/are pending in the application.

4a) Of the above claim(s) *2,19 and 54-72* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-6,13-15,17,18,20-23 and 28* is/are rejected.

7)☒ Claim(s) *7-12,24-27 and 30-36* is/are objected to.

8)☒ Claim(s) *1-15,17-28,30-36 and 54-72* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

Claims 13, 17, and 28 were amended, claims 16 and 29 were canceled, and new claims 54-72 were added in Paper No. 19 filed 04 June 2003. Claims 37-53 were canceled in Paper No. 20, supplemental to Paper No. 19 and filed 11 June 2003. Claims 54-72 read on one or more non-elected inventions and have been presented by applicant with the intention of retaining the right to rejoinder once product claims have been found allowable. Claims 1-15, 17-28, 30-36, and 54-72 are pending.

Claims 1, 3-15, 17, 18, 20-28, and 30-36 are under examination insofar as drawn to the elected invention. Claims 2, 19, and 54-72 remain pending but are withdrawn from consideration as drawn to non-elected inventions.

Rejections/objection withdrawn

Applicant's amendments to claims 13, 17, and 28 and cancelation of claims 16 and 29 have overcome the objection to claims 16 and 29 and rejection under 35 USC 112, second paragraph, of claim 17 as previously set forth.

The Declaration of Arlene Ramsingh under 37 CFR 1.132 filed 04 June 2003 is sufficient to overcome the previously presented rejections of claims 1, 3-18 and 20-36 based upon Halim et al. (AIDS Research and Human Retroviruses 16(15):1551-1558, 2000), and of claims 1, 3-12, 18, 20-27 and 30-36 based upon Halim et al. (Vaccine 19:958-965, 2001), both references applied under 35 USC 102(a).

New rejection

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 4, 18, and 20-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Caggana et al. (Journal of Virology 67(8):4797-4803, 1993), of record. Caggana teaches coxsackievirus CB4-P/CB4-V chimeras, in which an attenuated strain, CB4-P, expresses heterologous, CB4-V, proteins of various types at various regions of the CB4-P genome, including just downstream from codon 129 of VP1 (see, e.g., page 4797-4798, "Construction of recombinant viruses"; page 4798, Fig. 1; and the paragraph that bridges the text of pages 4799 and 4801). According to the definition of "heterologous" provided at page 12, lines 28-30, of the instant specification ("The term 'heterologous polypeptide' refers to a polypeptide which is not otherwise naturally expressed by the virus."), CB4-V proteins, including capsid protein, are heterologous with respect to the attenuated CB4-P taught by Caggana et al. and the subject matter of claims 1, 3, 4, 18, and 20-26 is anticipated.

Rejection maintained

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 3-6,13-15, 17, 18, 20-23, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tracy et al., WO 98/39426, for reasons of record in rejecting claims 1, 3-6,13-18, 20-23, 28, and 29 in the previous Office action. Tracy et al. disclose coxsackievirus B serotypes 1-6 (page 1, lines 18-19), and attenuated coxsackievirus vectors for the delivery of nucleic acids encoding antigenic or therapeutic products, where heterologous nucleic acids may be inserted, for example, between a coding sequence for a capsid protein and a coding sequence for viral protease, or at the start of the genome's open reading frame or at other locations. While the actual examples presented by Tracy et al. involve coxsackievirus B3, the reference discloses at page 14, line 31-page 15, line 34, for example, that because of the high level of organizational similarity among the coxsackieviruses, any of the coxsackievirus B serotypes or other coxsackieviruses can be attenuated and modified for use as expression vectors for heterologous nucleic acids in the same manner as otherwise taught by Tracy et al. It would have been obvious to one of ordinary skill in the art at the time the invention was made to make a recombinant attenuated coxsackievirus B4 with an inserted heterologous nucleic acid, including an inserted heterologous nucleic acid at the start of the genome's reading frame, i.e., at the start of the sequence that encodes VP4,

because Tracy et al. teach that, because of the high degree of similarity among the coxsackievirus serotypes, any coxsackievirus B would be expected to provide equivalent results as an expression vector.

Applicant has argued (1) that it is not predictable whether inserting a heterologous nucleic acid into a virus of the coxsackievirus B serotype will result in a gain or loss of pathogenicity/virulence; (2) that it is important for use with the present invention that the vector not be a pathogen in the species in which it is being used and (3) that the cited reference does not provide for an "expectation of success"; (4) that molecular determinants for virulence are different depending on strain as well as on serotype; (5) that, relying on a supporting reference by Knowlton et al., a copy of which is provided, different mutations in CVB3 may be important for stimulating immune response and pathogenicity; (6) that, relying on a supporting reference by Dunn et al., a copy of which is provided, sites determining virulence phenotypes of CVB4, CVB3, and polioviruses are not found in the same viral capsid region or even on the same capsid protein; (7) that Applicant's success in expressing heterologous polypeptides would not have been predicted or evident from the disclosure of Tracy et al.; and (8) that the instant invention would have been obvious to try at best.

These arguments have been considered but not found persuasive. With respect to points (1), (3)-(6), and (8), absolute predictability is not required, but rather only a *reasonable* expectation for success. Further, it is evident that the state of the art with respect to pathogenicity/attenuation of CVB-4 at the time the invention was made, as shown by Caggana et al., of record, e.g., would support a reasonable expectation for

success in maintaining an attenuated phenotype if desired for CVB-4. Considering point (2), In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., that the vector not be a pathogen in the species in which it is being used) are not recited in the rejected claim. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims.. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Further, even if such limitation were recited, it would likely represent intended use only and not necessarily be entitled to be given patentable weight. With respect to (7), Applicant has disagreed but has presented argument only, and not evidence, as to why Tracy's teaching that, because of the high level of organizational similarity among the coxsackieviruses, any of the coxsackievirus B serotypes or other coxsackieviruses can be attenuated and modified for use as expression vectors for heterologous nucleic acids in the same manner as otherwise taught by Tracy et al., is not agreed with or is not correct.

Claims 7-12, 24-27, 30-36 are objected to as being dependent upon a rejected base claim, but would be allowable if claims 7 and 24 were rewritten in independent form including all of the limitations of the appropriate base claim and any intervening claims, and claim dependencies were amended as appropriate.

Because this action contains new grounds of rejection, it is made non-final. Any inconvenience is regretted.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donna C. Wortman, Ph.D. whose telephone number is

703-308-1032. The examiner can normally be reached on Monday-Thursday, 7:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Housel can be reached on 703-308-4027. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9307 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

Donna C. Wortman, Ph.D.
Primary Examiner
Art Unit 1648

dcw
August 25, 2003